Amendments to the Claims:

1. (currently amended) A method for reducing a blocking artifact in a video stream, the method comprising:

calculating an activity value representing local activity around a block boundary between a plurality of adjacent blocks in the video stream;

determining a region mode to be one of active region, smooth region, or dormant region for the block boundary according to the activity value; and

filtering a plurality of pixels around the block boundary according to the region mode and the quantization parameters (QPs) of the adjacent blocks, wherein the filtered pixels are further refined according to the quantization parameters (QPs) of the adjacent blocks, or wherein symmetric filters or asymmetric filters are used to filter the pixels according to the quantization parameters (QPs) of the adjacent blocks;

wherein:

if at least one of the adjacent blocks is an intra-coded block:

if the activity value is greater than a first threshold, determining the region mode to be an active region;
if the activity value is less than the first threshold but greater than a second threshold, determining the region mode to be a smooth region; and

if the activity value is less than the second threshold, determining the region mode to be a dormant region; and

if none of the adjacent blocks are intra-coded blocks:

if the activity value is greater than a third threshold, determining the region mode to be an active region;

if the activity value is less than the third threshold but greater than the second threshold, determining the region mode to be a smooth region; and

if the activity value is less than the second threshold, determining the region mode to be a dormant region.

2. (original) The method of claim 1, wherein calculating the activity value comprises summing absolute differences between pixels V_l around the block boundary as follows:

$$ACTIVITY = \sum_{l=4}^{6} |v_l - v_{l+1}| + \sum_{l=8}^{10} |v_l - v_{l+1}|$$

3. (canceled)

4. (currently amended) The method of claim 1 ~~claim 3~~, wherein the second threshold is fixed at a predetermined value.

5. (original) The method of claim 4, wherein the predetermined value is 6.

6. (currently amended) The method of claim 1 ~~claim 3~~, further comprising:

if at least one of the adjacent blocks is an intra-coded block:

if the region mode is active region,

if a high frequency component (c_3) is less than a fourth threshold, filtering the pixels around the block boundary using a first filter;

if the region mode is smooth region,

if the absolute value of the difference of the pixel values on either side of the block boundary is less than a fifth threshold,

if the QPs of the adjacent blocks are the same, filtering the pixels around the block boundary using a symmetric second filter; otherwise filtering the pixels around the block boundary using an asymmetric second filter; and

if the region mode is dormant region,

if the absolute value of the difference of the pixel values on either side of the block boundary is less than the fifth threshold,

if the QPs of the adjacent blocks are the same, filtering the pixels around the block boundary using a symmetric third filter; otherwise filtering the pixels around the block boundary using an asymmetric third filter; and

if none of the adjacent blocks are intra-coded blocks:

if the region mode is active region,

if a high frequency component (c_3) is less than a sixth threshold, filtering the pixels around the block boundary using the first filter;

if the region mode is smooth region,

if the absolute value of the difference of the pixel values on either side of

the block boundary is less than a seventh threshold,

if the QPs of the adjacent blocks are the same, filtering the pixels around the block boundary using the symmetric second filter; otherwise filtering the pixels around the block boundary using the asymmetric second filter; and

if the region mode is dormant region,

if the absolute value of the difference of the pixel values on either side of the block boundary is less than the seventh threshold,

if the QPs of the adjacent blocks are the same, filtering the pixels around the block boundary using the symmetric third filter; otherwise filtering the pixels around the block boundary using the asymmetric third filter.

7. (original) The method of claim 6, wherein:

the symmetric second filter is an N-tap symmetric filter;

the asymmetric second filter is an M-tap asymmetric filter;

the symmetric third filter is a K-tap symmetric filter; and

the asymmetric third filter is an L-tap asymmetric filter.

8. (original) The method of claim 7, wherein:

the N-tap symmetric filter is [1 3 8 3 1]/16;

the M-tap asymmetric filter is [1 2 8 3 2]/16 and [2 3 8 2 1]/16;

the K-tap symmetric filter is [1 2 2 2 1]/8; and

the L-tap asymmetric filter is [1 1 2 2 2]/8 and [2 2 2 1 1]/8.

9. (original) The method of claim 6, wherein filtering the pixels around the block boundary comprises first filtering the pixels at the block boundary and next filtering pixels not adjacent to the pixels at the block boundary.

10. (original) The method of claim 6, further comprising adaptively determining the first, third, fourth, and fifth thresholds by at least taking into account differences in quantization parameters QPs of the adjacent blocks.

11. (original) The method of claim 10, further taking into account a user defined offset (UDO) allowing the first, third, fourth, and fifth threshold levels to be adjusted according to the UDO value.

12. (original) The method of claim 6, wherein the high frequency component (c_3) is calculated using pixels v_6, v_7, v_8, v_9 around the block boundary as follows: $c_3 = (v_6 - v_7 + v_8 - v_9)/2$.

13. (original) The method of claim 6, wherein the first filter is a one dimensional filter formed by using a 4-point Hadamard Transform (HT), wherein the high frequency coefficient of the HT is reduced to 0 for frame-coded pictures.

14. (original) The method of claim 6, wherein the first filter is a one dimensional filter formed by using a 4-point Hadamard Transform (HT), wherein the high frequency coefficient of the HT is reduced to one half for field-coded pictures.

15. (original) The method of claim 6, wherein the filtered pixels are further refined by adjusting a pixel quantized with a larger QP to have more change in value than a pixel quantized with a smaller QP.

16. (original) The method of claim 15, wherein a first weighting value WT1 and a second weighting value WT2 are used for adjusting the filtered pixels and are obtained from a first quantization parameter QP1 of a first adjacent block and a second quantization parameter QP2 of a second adjacent block as follows:

$$WT1 = {QP1}/{QP1 + QP2} \quad , \quad WT2 = {QP2}/{QP1 + QP2}$$

17. (original) The method of claim 1, further comprising if the video stream comprises interlaced video, performing an interpolation operation to estimate pixel values in an interlaced field before filtering the pixels around the block boundary.

18. (original) The method of claim 1, further comprising determining a filtering range according to block coding types of the adjacent blocks in the video stream; wherein the filtering range specifies a number of pixels to filter around the block boundary.

19. (original) The method of claim 18, wherein according to the block coding types of the adjacent blocks in the video stream, determining the filtering range to be up to eight pixels around the block boundary.

20. (original) The method of claim 18, wherein determining a filtering range according to the block coding types of the adjacent blocks in the video stream further comprises:

if at least one of the adjacent blocks is an intra-coded block, determining the filtering range to be up to four pixels around the block boundary; and

if none of the adjacent blocks are intra-coded blocks, determining the filtering range to be up to eight pixels around the block boundary.

21. (original) The method of claim 1, wherein the video stream is an MPEG video stream.